

May 2, 1933.

W. D. ANTRIM

1,907,414

OVEN OF GAS AND ELECTRIC RANGES

Filed Oct. 19, 1931

2 Sheets-Sheet 1

*Fig. 1.*

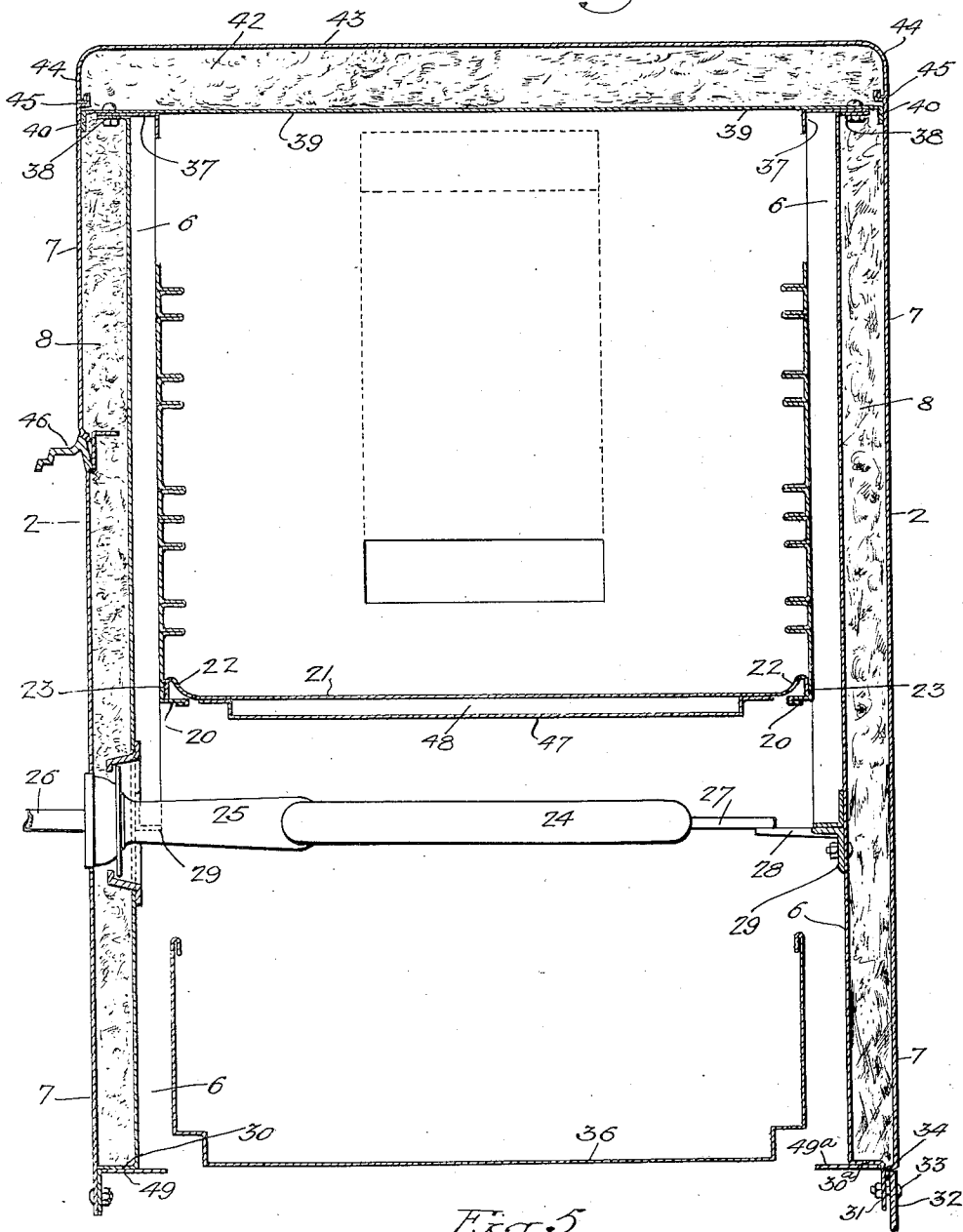
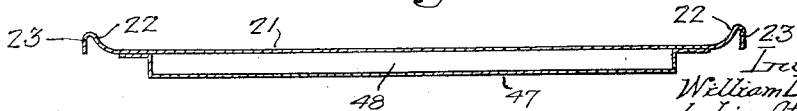


*Fig. 5.*



Inventor  
William D. Antrim  
by his Attorneys  
Hosmer & Hosmer

May 2, 1933.

W. D. ANTRIM

1,907,414

OVEN OF GAS AND ELECTRIC RANGES

Filed Oct. 19, 1931

2 Sheets-Sheet 2

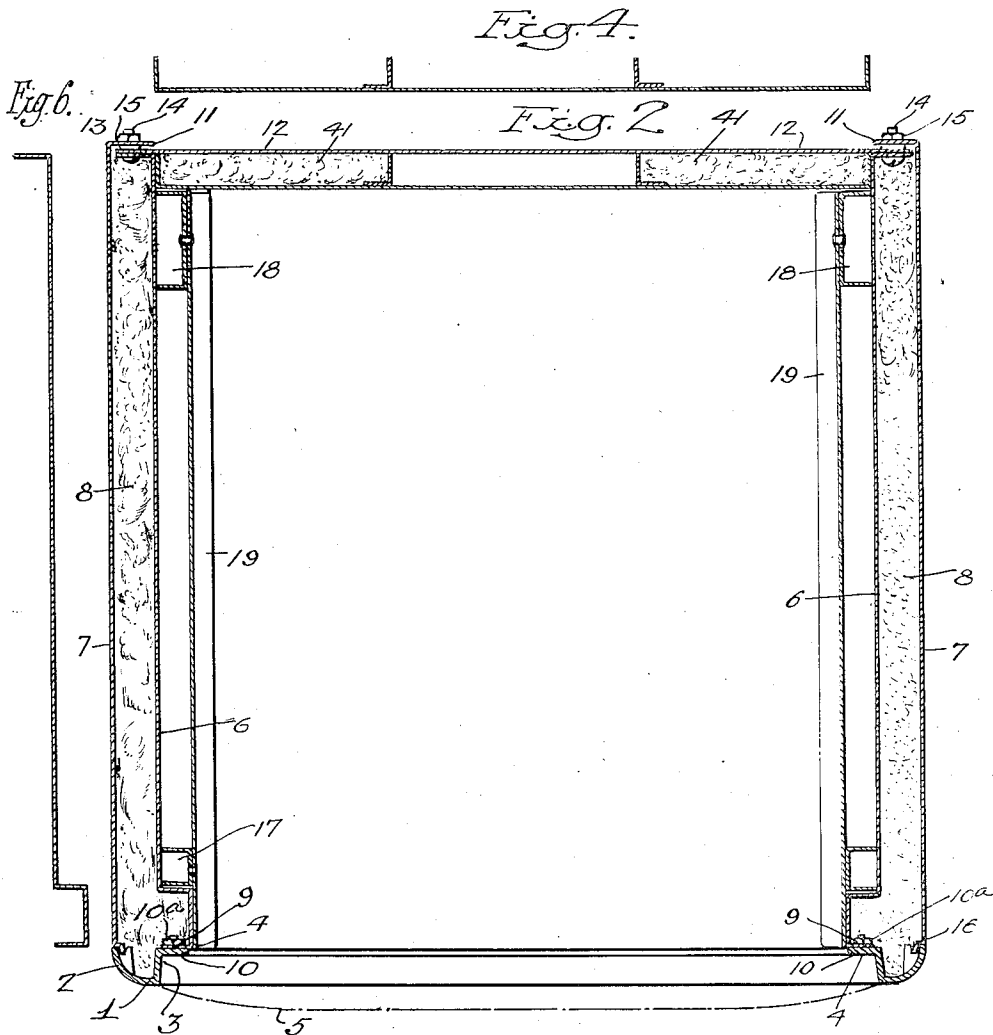
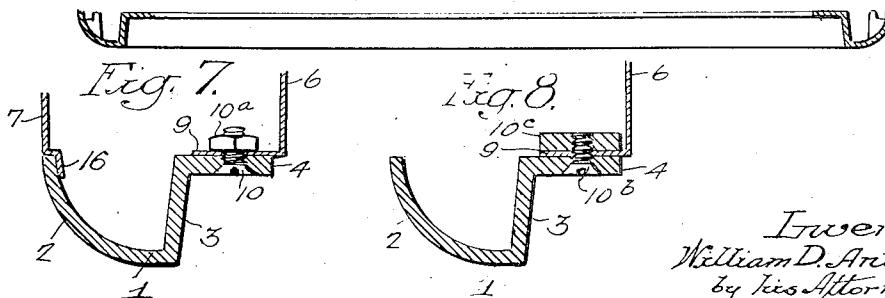


*Fig. 3.*



*Inventor:*  
William D. Antrim  
by his Attorneys  
Hawson & Hawson

# UNITED STATES PATENT OFFICE

WILLIAM D. ANTRIM, OF GLOUCESTER, NEW JERSEY, ASSIGNOR TO ROBERTS & MANDER STOVE COMPANY, OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA

## OVEN OF GAS AND ELECTRIC RANGES

Application filed October 19, 1931. Serial No. 569,813.

My invention relates to certain improvements in ovens of gas and electric ranges in which there is an inner and outer casing enclosing heat non-conducting material.

One object of my invention is to improve the oven structure so that it can be accurately and quickly assembled.

A further object of the invention is to so construct the oven that the outer casing and the non-conducting material can be removed from the inner casing for repairs without disturbing the inner oven structure.

A still further object of the invention is to make the internal casing of the oven as a fixture either secured permanently to the front plate or detachably secured thereto.

A further object of the invention is to prevent the cracking of the enamel on the inner walls of the oven during transportation by making the inner casing as a rigid structure.

In the accompanying drawings:

Fig. 1 is a sectional elevation of my improved oven structure for gas and electric ranges;

Fig. 2 is a sectional plan view on the line 2-2, Fig. 1;

Fig. 3 is a detached sectional plan view of the front plate of the oven;

Fig. 4 is a detached sectional plan view of the inner back plate of the oven;

Fig. 5 is a detached sectional view of the bottom plate of the oven;

Fig. 6 is a detached sectional plan view of one of the side plates;

Fig. 7 is an enlarged sectional view of a portion of Fig. 1, showing clearly the method of attaching the front plate to the inner side wall of the oven; and

Fig. 8 is an enlarged sectional view illustrating a modification.

1 is the front plate of the oven, preferably made of cast metal. In the present instance this front plate has a rounded outer flange 2 and an inner flange 3 which is inturned at 4 forming a seat for the oven door 5, shown by dotted lines in Fig. 2. 6 are the inner side plates of the oven and 7 are the outer side plates, spaced from the inner side plates for the introduction of heat non-conducting

material 8. This heat non-conducting material is preferably made in sheets so as to be readily applied to the oven structure.

Each inner side plate has an upturned flange 9 at the forward end, which is secured by bolts 10 in the present instance to the inturned flange 4 of the front plate. The nuts 10a on these bolts are located on the inside so that they can not be removed without first removing the outer side plates and non-conducting material, making the front plate a permanent portion of the inner oven structure. In some instances however, particularly when the oven is to be shipped great distances, it may be desirable to make the cast front plate removable so that in the event of breakage it can be readily replaced.

In Fig. 8 the bolt 10b is screwed into a strip 10c at the back of the flange 4 and this plate takes the place of the nut shown in Fig. 7, and by removing the bolts from the front, the front plate can be detached in the event of breakage and another plate readily applied. The rear end of each side plate has an outturned flange 11 which is secured to the outer rear plate 12 of the oven and to the inturned flange 13 of the outer side plates 7 by bolts 14, the nuts 15 of these bolts being on the outside so that they can be securely fastened after the parts have been assembled.

The forward end of each outside plate 7 has a shouldered inturned flange 16, as shown in Figs. 2 and 7, so that the flange will rest back of the outer flange 2 of the front plate 1 and will be held firmly to the front plate at its forward end.

Within the oven structure are two rack plates 19, one at each side, for supporting the slides. These rack plates are rigidly secured by rivets or other means to forward and rear channel members 17 and 18, which space the rack plates from the oven structure, thus forming an open channel at each side of the oven. These channel members rest upon angle bars 29 which are secured to the inner side plates 6 and are held in position at their upper ends by an angle plate 37, which is secured to the top oven plate 39 and an upper flange of the inner side plate 6 by bolts 38.

At the lower end of each rack plate is an

inturned flange 20 which supports the bottom plate 21 of the inner oven structure. The bottom plate in the present instance is curved upwards at each side as at 22 and has a downturned flange 23 which rests upon the flange 20. By this construction the bottom plate of the oven can be forced into position and held rigidly when in position. Secured to the underside of the bottom plate 21 is a deflecting plate 47 spaced from the bottom plate to form an air chamber 48, so that the flame from the burner 24 does not strike the bottom plate 21.

The burner in this instance is the ordinary gas burner having a mixing chamber 25 into which extends the gas pipe 26. The inner end of the burner has an extension 27 in the present instance, which rests upon a flange 28 forming a part of the angle bar 29 at that side of the oven.

Secured to the lower end of the left-hand outer side plate is an angle plate 49. The lower end of the inner plate 6 is flanged at 30 and rests upon this angle plate. On the opposite side the flange 30a of the inner side plate 6 is turned down as at 31 and is secured to a comparatively heavy bar 32, and clamped between the two parts is the inturned offset flange 34 of the outer plate 7. 49a is a horizontal plate on which the flanged inner plate 6 rests as shown in Fig. 1.

The means of supporting the lower portion of the oven structure may be modified without departing from the essential features of the invention.

Located in the lower portion of the structure is a bottom plate 36 having upturned sides. This is the ordinary type of bottom plate used in gas ranges. The inner top plate 39 of the oven, which is secured to the inner side plates 6 has downturned flanges 40 which hold the outer plates 7 in alignment at their upper ends and these flanges also act to stiffen the top plate 39.

By the above construction the parts can be readily and accurately assembled. The inside side plates 6 are first secured to the top plate 39 by the bolts 38. Then the front plate 1 is secured to the forward flanges of the side plates by the bolts 10. The rack plates are then placed in position and the bottom plate 21 is forced into position, holding the lower ends of the rack plates firmly against the side plates. The upper ends of the channel members which form part of the rack plates are held by the flanges of the angle plate 37, which is also bolted to the top plate 39 as clearly shown in Fig. 1.

In the present instance the entire inner surface of the oven is enameled and it is desirable that these enameled parts shall not be disturbed in the event of repairs to the outer portions of the oven. The side sheets of non-conducting material 8 are then placed in position as well as the sheets of non-con-

ducting material 41 at the back of the oven and the outer rear plate 12 is then located in position and the side plates 7 are fitted to the front plate and secured to the back plate by the bolts 14. Then the top sheet of non-conducting material 42 is placed on top of the inner top plate 39 and the outer top plate 43 is located over the non-conducting material and the downturned edges 44 of this top plate rests upon the inturned flanges 45 on the outer side plates 7, completing the assembly of the oven structure. In this instance the side plates 7 on one side of the oven structure extend the full height of the oven, while at the opposite side the plate is made in two pieces and located between the two pieces is a cast metal ornamental flange 46, which may form a continuation of the flange of the body of the gas stove. This construction, however, may be omitted and the side plate may be made in one piece if desired.

By the above construction it will be seen that the outside plates of the oven structure and the non-conducting material may be removed if desired without disturbing the inner or main portion of the oven structure.

I claim:

1. The combination in an oven structure for ranges, of a front plate; inner side plates secured to the front plate; an inner back plate; an outer back plate; outer side plates engaging the front plate and secured at their rear ends to the inner side plate and the outer back plate; and non-conducting material between the inner and outer side plates and the inner and outer back plates, the fastening means at the rear end of the structure being accessible from the outside.

2. The combination in an oven structure, of a front plate; side plates having outturned flanges; bolts securing said flanges to the front plate, the said inside side plates having outturned flanges at their rear ends; outside side plates having flanges extending back of the outer flanges of the front plate and having inturned flanges at their rear ends overlapping the flanges of the inner side plates; inner and outer back plates spaced apart, the outer back plate extending between the flanges of the inner and outer side plates; and bolts securing the inner and outer side plates and the back plates together.

3. The combination in an oven structure, of a front plate; inner and outer side plates, the inner side plates being rigidly secured to the front plate, the outer plates being detachably secured thereto and spaced from the inner plates; heat non-conducting material located between the inner and outer plates; two rack plate structures, one located on each side of the oven, the said rack plate structures having inturned flanges at their lower edges; a bottom plate resting on the said flanges and holding the bottoms of the rack plates in position; top flanged plates se-

cured to the inside side plates of the oven and extending over the rack plate structures, securing the upper portions of said structures in position; inner and outer top plates; and  
5 non-conducting material between the inner and outer plates.

4. The combination in an oven structure, of a front plate; an inner casing arranged to be permanently secured to the front plate,  
10 consisting of two side members and a top member; two rack plates, one at each side of the oven structure; a bottom plate and a top plate with an outer casing detachably secured to the structure and spaced from the side  
15 plates and top plate; and heat non-conducting material in the space between the two sections, the back plate of the outer section being secured by bolts accessible from the outside and the top plate resting upon the  
20 side members of the outer section.

WILLIAM D. ANTRIM.

25

30

35

40

45

50

55

60

65